

WHAT IS CLAIMED IS:

1. A dry-powder inhaler device comprising at least one air inlet, a flow chamber and an air outlet leading to a mouthpiece, said flow chamber further comprising at least one compressed powder volume and at least one scraping surface; wherein the inhalation action of the patient applied at said air outlet causes air to flow from said at least one air inlet through said flow chamber, said air flow generating relative motion between said at least one compressed-powder volume and said at least one scraping surface such that fine particles of powder are scraped from the compressed-powder volume and inhaled by the patient.
2. The inhaler device of claim 1 where said scraping surface is a blade of an impeller, said blade gradually extending outwards as said impeller rotates, thereby ensuring a time lag between the start of said inhalation action and the first release of said fine particles.
3. The inhaler device of claim 1 where said compressed-powder volume is divided into a number of sections that can be advanced into said flow chamber in order to reload said device.
4. The inhaler device of claim 1 further comprising a particle filter located between said flow chamber and said outlet to ensure that large particles are not inhaled.
5. The inhaler device of claim 1 further comprising a mouthpiece attachable to said outlet.
6. The inhaler device of claim 5 where said mouthpiece is an integral part of said inhaler device.
7. The inhaler device of claim 5 where said mouthpiece is attached by the patient to said outlet.
8. The inhaler device of claim 7 further comprising a storage compartment for said mouthpiece.
9. The inhaler device of claim 1 where said scraping surfaces are movable and said compressed-powder volumes are static.
10. The inhaler device of claim 1 where said scraping surfaces are static and said compressed-powder volumes are movable.

11. The inhaler device of claim 1 where both scraping surfaces and said compressed-powder volumes are movable.
12. The inhaler device of claims 9, 10, and 11 where the movement is synchronized with the inhalation flow.
13. The inhaler device of claim 1 where said device is shaped like a credit-card.
14. The inhaler device of claim 1 where the shape of said device belongs to the group including cylinders, prisms, disks, ovals, and conventional hand-held inhalers.
15. The inhaler device of claim 1 where said compressed-powder volume belongs to the group including disks, tablets, and fixed internal surfaces of said device.
16. The inhaler device of claim 15 where the drug is fixed to a member introduced to the flow control chamber such as a film strip.
17. The inhaler device of claim 16 where the drug is protected in enclosures that are opened prior to use.
18. The inhaler device of claim 1 where the active drug ingredients are selectively dispersed in the compressed- powder volume.
19. The inhaler device of claim 1 where said compressed-powder volume is compressed into a structural element.
20. The inhaler device of claim 1 where said device is loaded with more than one drug.
21. The inhaler device of claim 1 where said compressed-powder volume is replaceable.
22. The inhalation device of claim 1 where said scraping means belongs to the group including impellers and fixed internal surfaces of said device.
23. A dry powder inhaler device according to claim 1 comprising a multiplicity of air inlets.
24. A dry powder inhaler device according to claim 1 comprising a multiplicity of compressed-powder volumes.
25. A dry powder inhaler device according to claim 1 comprising a multiplicity of scraping surfaces.

AMENDED CLAIMS

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WHAT IS CLAIMED IS:

1. A dry-powder, breath-powered inhaler device comprising at least one air inlet, a flow chamber and an air outlet leading to a mouthpiece, said flow chamber further comprising at least one compressed powder volume and at least one scraping surface; wherein the inhalation action of the patient applied at said air outlet causes air to flow from said at least one air inlet through said flow chamber, said air flow generating breath-driven, relative motion between said at least one compressed-powder volume and said at least one scraping surface such that fine particles of powder are scraped from the compressed-powder volume and inhaled by the patient.
2. The inhaler device of claim 1 where said scraping surface is a blade of an impeller, said blade gradually extending outwards as said impeller rotates, thereby ensuring a time lag between the start of said inhalation action and the first release of said fine particles.
3. The inhaler device of claim 1 where said compressed-powder volume is divided into a number of sections that can be advanced into said flow chamber in order to reload said device.
4. The inhaler device of claim 1 further comprising a particle filter located between said flow chamber and said outlet to ensure that large particles are not inhaled.
5. The inhaler device of claim 1 further comprising a mouthpiece attachable to said outlet.
6. The inhaler device of claim 5 where said mouthpiece is an integral part of said inhaler device.
7. The inhaler device of claim 5 where said mouthpiece is attached by the patient to said outlet.
8. The inhaler device of claim 7 further comprising a storage compartment for said mouthpiece.
9. The inhaler device of claim 1 where said scraping surfaces are movable and said compressed-powder volumes are static.
10. The inhaler device of claim 1 where said scraping surfaces are static and said compressed-powder volumes are movable.